REMARKS

In the Final Office Action dated January 25, 2008 the Examiner rejected all pending Claims 1-24 under various combinations of *Sugama et al* (US Patent Publication 2002/0118907 hereinafter "*Sugama*") and *Nakamura et al* (USPN 5,604,835 hereinafter "*Nakamura*"). In response thereto, the Applicant has **amended Claims 1, 3, 12, and 18** as well as **adding Claims 25-27. Claims 1-27 remain at issue.**

THE ART REJECTIONs

The Applicant has amended **Claim 1** to clarify the structural distinctions between the cited art and the claimed invention. For example, Claim 1 now recites that the plurality of core channels are arranged "along the a top surface of the ... bottom cladding layer" and wherein the "curved section" of the core is "**formed so that a bottom surface of the core channel lies on the top surface of the bottom cladding layer**". Moreover, Claim 1 is further amended to recite a "patterned top cladding layer" with an "opening that exposes the curved section of the core channel to the ambient air". No such structure having both of those features is taught in *Sugama*. Thus, for at least this reason, the cited art fails as an effective anticipatory reference. To the extent that *Sugama* is argued to teach this limitation, the Examiner is kindly requested to identify, by precise page (column) and line numbers as well as drawing number and figure identification numbers exactly where such a limitation is taught in the cited art as required under section 706.02(j)(A) of the MPEP. The applicants point out that the identified "openings 16" (e.g., FIG. 13 or 14, ¶ [0172],) are not openings at all but rather "interlayer optical transfer portion 16" which are the mirror transfer structures for interlayer light transfer (FIG 15 being a perfect example of such). More dispositively, *Sugama* at [0174] spells out exactly that "optical transfer portion 16 (hereinafter referred to as an "optical ***via*** hole")". At this point it is readily clear that optical via hole 16 does not refer to a curved optical core but instead refers to a via. And under any eventuality it is clear that all *Sugama* teaches or suggests to a person having ordinary skill in the art is that 16 is a via structure. It clearly does not teach or suggest a curved core having an opening in a top cladding layer arranged to enable a tighter radius of curvature. Curvature is not at issue at all here.

Furthermore, the "openings" 20 of FIG. 16 do not expose the cores 23. As can readily be seen in FIG. 16H the "openings" are not exposed to the ambient, but rather are covered with

reflective material. The only openings pointed out (e.g., the identified FIG. 16) in the Action are the mirror cuts 20 made in the top layer 27. These are coved by mirrors 28 which prevents the cores from exposure to the ambient. Moreover, even if the were exposed to the ambient, they are not curved portions formed on the bottom cladding. Thus, they are neither curved, nor are they exposed to the ambient, nor do they rest on bottom cladding.

The applicant's further explain that the vias of do not comprise curved cores. This is rather evident from all depictions of such structures (e.g., FIGS. 16, 25-30, etc.). The arguments made in the prior action that the portions 16 of *Sugama* are vias are incontrovertibly correct. All one needs to do is examine *Sugama* to see that no curvature is implied and that vias are made to facilitate the use of mirrors to "bend" the optical path. Moreover, these statements are at best confusing and would rather not provide any meaningful teaching or suggestion enabling one of ordinary skill to practice the invention as claimed. This point of view is substantially supported by the claims which all require mirrors to "bend" the light, not curved waveguides.

The amendments to **Claim 3** go further and recite that the cores "include a straight portion on either end of the curved section" and that an "opening in the patterned top cladding layer exposes the curved section and at least some of the straight portion of the core channel to the ambient air". This structure is shown in all of the figures of the present invention and is entirely absent from all cited art. Such structure is particularly, impossible to construct using *Sugama*.

New **Claim 25** shows yet another distinction not taught or suggested by the cited art. A wave guide system wherein the opening "exposes the entire curved section of the core channel to the ambient air". This is not mentioned, suggested or in anyway depicted in the cited art. This is mostly, because the cited art does not appreciate the advantages of a selectively patterned cladding layer designed to facilitate tighter curvature in a core.

The amendments to **Claim 12** highlight a different aspect of the claimed invention. In Claim 12 the "core channel formed on a top surface of the bottom cladding layer ...having a curved section which follows a curved path on the bottom cladding layer" *and* the top cladding is arranged so "that the core channel is sandwiched between the bottom and the top cladding layer" and also an "opening that exposes the curved section of the core channel to the ambient air" is configured. This combination is not taught or suggested in the cited art.

New **Claim 26** is related to Claim 12 and shows yet another distinction not taught or suggested by the cited art. A wave guide system wherein the "opening in the top cladding layer exposes the entire curved section of the core channel to the ambient air". This is not mentioned, suggested or in anyway depicted in the cited art. As before, this is mostly, because the cited art

does not appreciate the advantages of a selectively patterned cladding layer designed to facilitate tighter curvature in a core.

Claim 18 has also been amended such that it recites core channels "formed so that a bottom of the curved portion is formed on the top of the bottom cladding layer" and "the patterned top cladding layer has at least one opening that exposes at least one curved portion of the core channel to the ambient air enabling a radius of the curved section to be smaller than when the top cladding layer covers the curved portion". This is well explained above with respect to Claim 1 and is similarly applicable here. Accordingly, the applicable limitations are absent from the cited art.

Finally, **added Claim 18** recites "a core channel having a curved section which follows a curved path on a top surface of the bottom cladding layer, said curved path having a radius" and "wherein the top cladding is selectively pattered to have at least one opening that exposes the **entire** curved section of the core channel to the ambient air so that the radius of the curved section is smaller than otherwise possible if the top cladding layer covered the curved section". The cited art teaches no curved core having a radius and moreover does not teach that the entire curve is exposed to the ambient.

Conclusion:

In view of the foregoing amendments and remarks, it is respectfully submitted that the claimed invention as presently presented is patentable over the art of record and that this case is now in condition for allowance.

Accordingly, the applicants request withdrawal of all pending rejections and request reconsideration of the pending application and prompt passage to issuance. As an aside, the applicants clarify that any lack of response to any of the issues raised by the Examiner is not an admission by the applicant as to the accuracy of the Examiner's assertions with respect to such issues. Moreover, many of the issues and conclusions reached in the Examiners previous responses are expressly disagreed with by the Applicant, but not discussed at this time because they are not necessarily relevant to the narrow issues discussed herein. However, the Applicants failure to discuss these issues in this Action shall not be taken as an admission of accuracy of the Examiners position, nor shall it prejudice the right of the applicant's right to contest each and every one of these issues at a later time. Accordingly, applicant's specifically reserve the right to

respond to such issues at a later time during the prosecution of the present application, should such a need arise.

As always, the Examiner is cordially invited to telephone the applicants representative to discuss any matters pertaining to this case. Should the Examiner wish to contact the undersigned for any reason, the telephone numbers set out below can be used.

Additionally, if any fees are due in connection with the filing of this Amendment, the Commissioner is authorized to deduct such fees from the undersigned's Deposit Account No. 50-4481 (Order No. GRAMP007).

Respectfully submitted,
BEYER LAW GROUP LLP

/Francis T. Kalinski II/
Francis T. Kalinski II
Reg. No. 44,177

P.O. Box 1687
Cupertino, CA 95015-1687
408-255-8001